

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of
Youngbok SON; Jinhyouk SHIN; Sang-Hun
BAE and Sung-Hwa LEE

Confirmation No.: 3547

Serial No.: 10/579,735

Group Art Unit: 3723

Filed: 5/18/2006

Examiner: Scruggs, Robert J.

For: VACUUM CLEANER

Customer No.: 34610

PRE-APPEAL BRIEF REQUEST FOR REVIEW

U.S. Patent and Trademark Office
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Randolph Building
401 Dulany Street
Alexandria, Virginia 22314

Sir:

Applicants request review of the final rejection in the above-identified application. No amendments are filed with this Request. This Request is being filed with a Notice of Appeal.

The Examiner is thanked for the courtesies extended to applicants' representative during the interview conducted July 8, 2010. The substance of the interview is reflected herein.

The Office Action rejects claims 1-4, 6 and 8-12 under 35 U.S.C. §103(a) over U.S. Waldhauser in view of Nordeen. The rejection is respectfully traversed.

Independent claim 1 is directed to a vacuum cleaner, including a suction head installed at a front end of a suction path, wherein a vacuum pressure generated by a suction motor draws substances in through a suction hole formed in a bottom surface of an outer casing of the suction head and into the suction path, a brush rotatably installed in the suction hole of the suction head, and configured to rotatably contact a surface to be cleaned, and at least one hair tunnel formed in the suction head, wherein an inlet into the at least one hair tunnel and an inlet into the suction hole are spaced apart from each other on the bottom surface of the outer casing

with a corresponding portion of the bottom surface of the outer casing positioned therebetween such that the brush installed in the suction hole does not interfere with the at least one hair tunnel, wherein the at least one hair tunnel draws thin and long substances from the surface.

As set forth during the interview, Waldhauser and Nordeen neither disclose nor suggest all of the features recited in independent claim 1, or the claimed combination of features.

Waldhauser discloses a floor scrubber including a scrub head 16 having a brush housing 20 with a brush 22 rotatably installed therein, with tubes 26 that provide cleaning fluid onto the brush 22 for wet cleaning of the floor as the brush 22 rotates. As the scrub head 16 is moved forward and rearward (arrows 50 and 52 in Figures 3 and 4 of Waldhauser, respectively), front and rear squeegees 34 and 40 squeegee fluid off the floor and into a plenum chamber 46, where it flows through a stub tube 48 and into the body 10. The front and rear squeegees 34/40 include outer lips 36/42 and inner lips 38/44 each made of a flexible material. During forward motion, the front squeegee 34 is closed and the rear squeegee 40 is open. During rearward motion the front squeegee 34 is open and the rear squeegee 40 is closed.

In Waldhauser's floor scrubber, suction force is conveyed only through the openings defined by the front and rear squeegees 34/40. Suction force is not conveyed through the housing 20 of the scrub head 16 in which the brush 22 is installed. Rather, Waldhauser specifically discloses that cleaning fluid is directed into the housing 20 by the tubes 26 and onto the brush 22 so that the brush 22 can use the cleaning fluid to clean the floor as it rotates. Thus, the brush 22 is necessarily isolated from any type of suction path which would draw this fluid away from the floor before the brush 22 was able to use the fluid to actually clean the floor. Waldhauser neither discloses nor suggests a suction hole formed in a bottom surface of an outer casing of the suction head and into the suction path, and a brush rotatably installed in such a

suction hole of the suction head, as recited in independent claim 1.

Further, as set forth during the interview, essentially the entire bottom of Waldhauser's scrub head 16 is open, both at the fully open bottom face of the housing 20 in which the brush 22 is installed, and at the open bottom ends defined by the front and rear squeegees 34 and 40. Applicants respectfully disagree with the Examiner's position that the very small portion of the housing 20 between an inner diameter and an outer diameter of the inverted U shape of the housing, constitutes the bottom surface of the housing 20/scrub head 16, further submitting that this is an unreasonably broad interpretation of Waldhauser, and made only in light of the disclosure of the present application. Applicants maintain the position that the scrub head 16/housing 20 has no discernable bottom surface, and thus there is no bottom surface which separates an inlet into the space in which the brush 22 is positioned (i.e., the suction hole), and an inlet into either of the squeegees 34 and 40 (compared in the Office Action to the claimed at least one hair tunnel). Thus, Waldhauser neither discloses nor suggests at least one hair tunnel formed in the suction head, wherein an inlet into the at least one hair tunnel and an inlet into the suction hole are spaced apart from each other on the bottom surface of the outer casing with a corresponding portion of the bottom surface of the outer casing positioned therebetween, as recited in independent claim 1.

The Office Action combines Waldhauser with Nordeen, asserting that Nordeen teaches the claimed suction hole, and that it would have been obvious to incorporate such a suction hole into Waldhauser's floor scrubber based on the teachings of Nordeen. Applicants respectfully disagree.

In particular, as set forth above, the space in which Waldhauser's brush 22 is installed in the housing 20 is necessarily isolated from any type of suction path which would draw any of the

fluid away from the floor, as the cleaning effectiveness of Waldhauser's floor scrubber relies on the cleaning fluid reaching the floor and being agitated by rotation of the brush 22. Incorporation of a suction hole into this portion of Waldhauser's scrub head 16 by simply cutting a hole in an upper portion of the brush housing 20 would necessarily destroy the originally intended utility and functionality of Waldhauser's floor scrubber. Rather, it is respectfully submitted that Waldhauser specifically teaches away from such a modification. Thus, it is respectfully submitted that it would not have been obvious to modify Waldhauser's scrub head 16 in the manner suggested in the Office Action.

However, even if Nordeen is improperly combined with Waldhauser, Nordeen still fails to overcome the deficiencies of Waldhauser. Nordeen discloses a suction nozzle 10 having a top wall 19 and a bottom wall 19b. A single, large opening is formed in the bottom wall 19b to accommodate a pair of brushes 16 and 17 and entrances 30 and 31 into transfer passages 25 and 29. Materials picked up by the rotating brushes 16 and 17 are swept substantially directly into the respective transfer passage entrances 30 and 31 by the brushes 16 and 17. As with Waldhauser, substantially the entire bottom surface of Nordeen's nozzle 10 is open, with the entrances 30 and 31 into the passages 25 and 29 and the space in which the brushes 16 and 17 are installed sharing a single, large opening. Like Waldhauser, Nordeen neither discloses nor suggest that an inlet into the at least one hair tunnel and an inlet into the suction hole are spaced apart from each other on the bottom surface of the outer casing with a corresponding portion of the bottom surface of the outer casing positioned therebetween such that the brush installed in the suction hole does not interfere with the at least one hair tunnel, as recited in independent claim 1.

For all of these reasons, it is respectfully submitted that independent claim 1, as well as

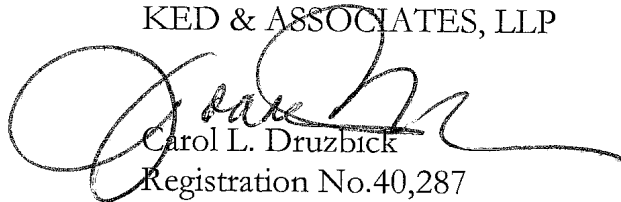
dependent claims 2-4, 6 and 8-12, are allowable over even the improperly applied combination, and thus the rejection should be withdrawn.

The Office Action rejects claim 7 under 35 U.S.C. §103(a) over Waldhauser and Nordeen in view of Martinez. The rejection is respectfully traversed.

Dependent claim 7 is allowable over Waldhauser and Nordeen at least at least in view of its dependency from claim 1, as well as for its added features. Martinez is merely cited as allegedly teaching a second sweeper, and thus fails to overcome the deficiencies of Waldhauser and Nordeen. Accordingly, the rejection should be withdrawn.

Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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